



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,108	05/27/2005	Josef Weiland	LORWER P37AUS	4794
84386	7590	05/04/2009		
Daniels Patent Law PLLC				
43 Centre Street				
Concord, NH 03301				
EXAMINER				
MULLER, BRYAN R				
ART UNIT		PAPER NUMBER		
3727				
MAIL DATE		DELIVERY MODE		
05/04/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/533,108

Applicant(s)

WEILAND, JOSEF

Examiner

BRYAN R. MULLER

Art Unit

3727

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 39-44, 46, 48-50, 52, 53, 55-76 and 78-89 is/are pending in the application.
- 4a) Of the above claim(s) 86-89 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 39-44, 46, 48-50, 52, 53, 55-61, 63, 64, 71-76 and 78-85 is/are rejected.
- 7) ☒ Claim(s) 62 and 65-70 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 April 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 2/13/2007 has been considered by the examiner. However, for better understanding of the foreign NPL documents, the examiner **requests a certified translation of both of the Ingromat references cited in the IDS as Non Patent Literature Documents.**

Election/Restrictions

2. Claims 86-89 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 2/1/2009.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the conveyors that are oriented such that at least one brush of each of the first, second, third and fourth brush machine either substantially all of or the entirety of the edge surface of the workpiece (claims 39, 76 and 78; the only drawing showing any of the brushes being oriented to contact any of the surface of the edge is Figure 18, which only shows two of the brushes positioned to contact an edge, not all four brushes) and the carrier segment with a tongue and groove and angled parallel bristles thereon (claim 82; embodiment

with tongue and groove only shown in Fig. 12 but not shown with angled parallel bristles) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

5. Claims 53, 81, 83 and 84 are objected to because of the following informalities: each of these claims indicates that the tip of each bristles is located in front of (or forward), in the direction of travel, of the opposite end of each respective bristle (or of

the bristle). However, the claim is unclear as to which bristle has the opposite end that the tip of each bristle is in front. As best understood by the Examiner, the applicant is intending to claim that the tip of each bristle is in front of, in the direction of rotation, the opposite end of each adjacent bristle in the direction of rotation, and will be treated as such for the sake of the current Office Action. Appropriate correction is required.

6. Claim 53 is further objected to because of the following informalities: the limitation "parallel inclined by up to 45° and" in line 3 of claim 53 should be changed to "parallel and inclined by up to 45° in a direction of rotation of each respective conveyor device and". Appropriate correction is required.

7. Claim 66 is objected to because of the following informalities: the term "(15" in line 2 of the claim should be changed to "(15)". Appropriate correction is required.

8. Claim 78 is objected to because of the following informalities: a comma should be added between the words "grinding" and "treating" in line 5 of the claim and the claim indicates that the brushes are guided *along* an entirety of the edge surface. However, for the workpiece to be a three dimensional structure, it would not be possible for the brushes to be guided *along* the entirety of the edge surface that extends around the perimeter of the workpiece because, as best understood by the Examiner, the brushes would have to be guided over at least a portion of the edge surface at an angle or perpendicular to the edge surface, which would not be considered to guide the brush *along* the edge surface. Appropriate correction is required.

9. Claim 80 is objected to because of the following informalities: the phrase "relative to the carrier segment" in line 17 of the claim should be changed to "in the

direction of rotation" to correspond to the structure supported by the original application and the other claims having similar limitations (claims 53, 83 and 84). Appropriate correction is required.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. Claim 39, as well as claims 40-44, 48-50, 52, 53, 55-75 and 85 which all depend therefrom, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 39 contains the limitation that the brushes of the first and second conveyor devices machine substantially all of the edge surface and the brushes of the third and fourth conveyor devices also machine substantially all of the edge surface. However, there is no support in the original application that the first and second conveyor devices as well as the third and fourth conveyor devices each contact and machine substantially all of the edge surface of the workpiece. At most, the original specification supports that the edge surface is machined but there is no sufficient support that substantially all of the edge surface is machined by each pair of the first and second conveyor devices and the third and fourth conveyor devices.

12. Claim 76 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 76 contains the limitation that contact and complete machining of the edge surface between at least one brush from the first, second, the third and the fourth conveyor devices along the entire respective edge surface of the workpiece. However, there is no support in the original application that at least one brush on all of the first through fourth conveyor devices contact and machine the entire edge surface of the workpiece. At most, the original specification supports that the edge surface is machined but there is no sufficient support that the entire edge surface is machined or that a brush from all of the first through fourth conveyor devices contacts the entire edge surface.

13. Claim 78, as well as claim 79 which depends therefrom, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 78 contains the limitation that the first and second conveyor devices guide the brushes along an entirety of the edge surface of the workpiece. However, there is no support in the original application that brushes are guided along the entire edge surface of the workpiece. At most, the original specification supports that the

edge surface is machined but there is no sufficient support that the entire edge surface is machined.

14. Claim 80, as well as claims 81 and 82 which depend therefrom, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 80 contains the limitation that the side edge surface is fully machined. However, there is no support in the original application that the edge surface is fully machined. At most, the original specification supports that the edge surface is machined, indicating at least some of the edge surface is contacted and machined, but there is no sufficient support that the edge surface is fully machined.

NOTE: The other pending claims including similar limitations that claim that "substantially all of the edge surface" is contacted by brushes and/or machined is only considered to be supported by the original application under the broadest reasonable interpretation of the term "substantially all" meaning at least portions of the edge surface are machined. The original application, specifically paragraph 20, as cited by the applicant, states that edges are machined, but does not further disclose that all of or even that any specific amount of the edges are actually machined. Therefore, in the rejections to be discussed below, the Examiner will treat the term "substantially all of the

Art Unit: 3727

edge surface", as used in the claims, to broadly read on at least portions of the edge surfaces, as best supported by the original application.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 39-42, 46, 48-50, 57-61, 63, 71-74 and 78 are rejected under 35 U.S.C. 103(a) as obvious over The Ingromat-Cleaner CH 29 publication (to be referred to hereinafter as Ingromat) or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ingromat in view of Herrington (2,767,413).

17. In reference to claim 39, the Ingromat reference discloses (on pages 16, 17 and 31) an apparatus for machining a workpiece being one of strip or plate form having first and second main surfaces and at least an edge surface extending between the first and second main surfaces, the apparatus being inherently capable of removing material from at least substantially all of the edge surface of the workpiece because the distance between the conveyor devices is adjustable and may therefore be adjusted such that the brushes will overlap the edge surface and contact at least a majority, or the entirety, of the edge surface when moving toward the main surfaces. In the case that the workpiece is relatively thin, even a slight overlap of the brushes would allow the

apparatus to contact and treat the entirety of the edge surface. The apparatus of the Ingromat reference comprises at least first, second, third and fourth conveyor devices and each of the first, second, third and fourth conveyor devices has at least one brush, each of at least first, the second, the third and the fourth conveyor devices guides the respective at least one brush at least approximately linearly along the first main surface and the edge surface of the workpiece to be machined transversely with respect to an advance direction of the workpiece, two of the conveyor devices (any two consecutive conveyors in the direction of advancement seen on the top surface on page 31; direction of rotation shown on page 17) rotate in opposite directions and may be positioned for treating the first main surface and at least a portion of the edge surface of the workpiece, the other two conveyor devices (any two consecutive conveyors in the direction of advancement seen on the bottom surface on page 31; direction of rotation shown on page 17) rotate in opposite directions and may be positioned for treating the second main surface and at least another portion the edge surface of the workpiece, and the first, second, third and fourth conveyor devices rotate so as to guide brushes along the first and second main surfaces of the workpiece and wherein the at least one brush from the first and second conveyor devices will machine substantially all* (at least a portion of; as most broadly and reasonably interpreted to be supported by the applicant's original disclosure, as discussed supra) of the edge surface in opposite directions and the at least one brush from the third and fourth conveyor devices will machine substantially all* of the edge surface in opposite directions. Although the Ingromat reference does not specifically disclose that the first, second, third and fourth

conveyor devices rotate so as to guide brushes along the *entirety* of a length available for the workpiece to pass through, the Ingromat reference does disclose other embodiments (pages 4-7) having two conveyor devices that are located along respective first and second main surfaces of the workpiece and rotate so as to pass brushes along the entirety of a length available for the workpiece to pass through on the first and second main surfaces of the workpiece, thus providing equal contact between the brushes and the entire main surfaces of the first and second sides of the workpiece, which will provide a uniform cleaning effect along the entirety of both main surface of the workpiece because the same number of brushes will contact the entirety of each main side of the workpiece. Therefore, it would have been obvious to one of ordinary skill in the art to extend each of the plurality of conveyor devices shown on pages 16, 17 and 31, such that every conveyor device will guide their respective brushes over the entirety of a length available for the workpiece to pass through on the respective first and second main sides of the workpiece to provide an even and uniform cleaning effect to every portion of both main surfaces of the workpiece instead of providing twice the number of brushes contacting a middle, overlapping portion as the number of brushes contacting either side of each main surface of the workpiece, as shown in the embodiment on pages 16, 17 and 31. The combination of the two embodiments disclosed in the Ingromat reference is essentially substituting a known element (conveyors passing over a portion of the main surface of the workpiece from pages 16, 17 and 31) with another (conveyor passing across the entire main surface of a workpiece from pages 4-7) to obtain predictable results (an apparatus having multiple

conveyor devices, rotating in a direction opposite the direction of adjacent conveyor devices, wherein every conveyor passes over the entirety a respective main surface of a workpiece will predictably provide a thorough and uniform cleaning effect to the main surfaces of the workpiece). Additionally, the Ingromat reference fails to disclose that the apparatus is used to remove an oxide layer from a surface of the workpiece. However, it would have been obvious that the brushes and conveyor devices, as disclosed in the Ingromat reference, being adjustable with respect to the workpiece to adjust contact pressure between the brushes and the workpiece, may be capable of removing at least a portion of an oxide layer from a surface of a workpiece over a given amount of time or treating the surface by cleaning debris off of the surface, which may be considered to be "machining" in the broadest reasonable interpretation of the term. In the alternative, Harrington discloses a similar apparatus that is disclosed as being used to remove scale, which is well known in the art as being an oxide layer, from metallic surfaces and comprises multiple rotary brushes that engage a first main surface of a workpiece that is in strip or plate form. Harrington further discloses specific bristle material for the brushes that is capable of removing the oxide layer. Harrington however only removes the oxide layer from one main surface of the workpiece at a time and due to the round shape of the brushes may only remove the oxide layer from a limited width on the main surface of the workpiece. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the Ingromat apparatus with brushes having the bristles disclosed by Harrington to allow the Ingromat apparatus to remove oxide layers from a large area of both the first and second main surfaces of a

workpiece at the same time in order to provide a much more efficient and effective apparatus for removing oxide layers from metallic workpieces that may be used on much larger workpieces than the apparatus of Herrington. It is obvious that the brushes are removable and interchangeable in the Ingromat apparatus, thus providing the apparatus with an alternative set of brush conveyors having bristles capable of removing scale, as taught by Herrington, would provide the apparatus with an alternative function that may be interchanged with the intended function disclosed in the Ingromat reference.

18. In reference to claim 40, the Ingromat reference further discloses that the conveyor devices are positioned in a lying position such that the at least one brush on each of the first, second, third and fourth conveyor devices runs substantially horizontally along the workpiece in a lying position.

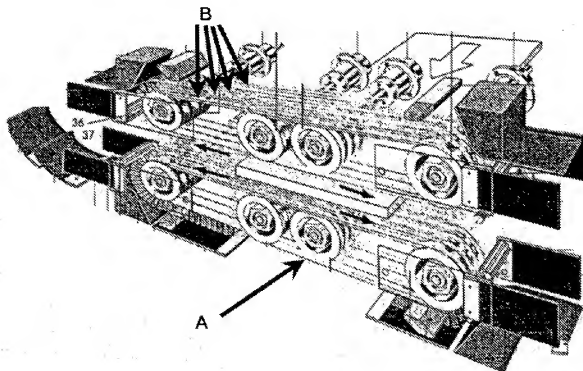
19. In reference to claim 41, the Ingromat reference further discloses that the workpiece is guided between the first and the second conveyor devices (the first conveyor being any of the conveyors on the upper portion of the apparatus and the second conveyor being any of the conveyors on the lower portion of the apparatus) such that each of the first and second conveyor devices machines one of the first and second main surfaces of the workpiece.

20. In reference to claim 42, the Ingromat reference further discloses that the direction of rotation of the first and second conveyor devices is selected such that the brushes of the first and second conveyor devices are guided past the opposed first and second main surfaces of the workpiece in a same direction, wherein the first and

second conveyor devices are considered to be any respective conveyors on opposite sides of the workpiece that rotate in the same direction.

21. In reference to claim 46, the Ingromat reference discloses an apparatus capable of "machining" a workpiece being one of strip or plate form having first and second main surfaces and an edge surface extending therebetween, the apparatus for removing material from the edge surface of the workpiece wherein the apparatus comprises at least first and second conveyor devices and each of the first and second conveyor devices has at least one brush, wherein the brushes disclosed may be capable of removing an oxide layer or alternatively it would have been obvious to replace the brush bristles of the Ingromat reference with the brush bristles disclosed by Herrington to allow the Ingromat apparatus to remove oxide layers from workpieces, as discussed supra, each of the at least first and second conveyor devices guides the respective at least one brush at least approximately linearly past the edge surface of the workpiece to be treated transversely with respect to an advance direction of the workpiece, the first and second conveyor devices rotate in opposite directions and the first conveyor device may be positioned for treating at least a portion of the edge surface of the workpiece while the second conveyor device may be positioned for treating at least a portion of the edge surface of the workpiece and the first and second conveyor devices are arranged slightly offset with respect to one another in the advance direction in which the workpiece passes through wherein the at least one brush from each of the first and second conveyor devices may inherently be positioned to machine the edge surface of

the workpiece in opposite directions to machine substantially all* of the edge surface of the workpiece. The first and second conveyor devices will be offset from one another in the embodiment shown on pages 16, 17 and 31, wherein for example, the first conveyor is considered to be the front most conveyor on the lower surface (A below) and the second conveyor is considered to be any of the conveyors on the upper surface that rotate in an opposite direction to the first conveyor (any one of B below), all of which are offset in the direction of advancement of the workpiece from the first conveyor.



22. In reference to claim 48, the Ingromat reference further discloses that each of the conveyor devices have a plurality of brushes.
23. In reference to claim 49, the Ingromat reference further discloses a guide passage between the upper and lower sections which may be set to a thickness of the

workpiece by which the workpiece may be displaced with guidance transversely with respect to the direction of rotation of the at least one of the conveyor devices.

24. In reference to claim 50, the Ingromat reference further discloses that an adjustment means for adjusting the distance between the first and second conveyor devices, which makes the apparatus inherently capable of displacing or adjusting the first and second conveyor devices with respect to one another to correct for wear of the at least one brush.

25. In reference to claim 57, the Ingromat reference fails to disclose a specific rotational speed for the brush, but it would be obvious that different speeds would be desired for different work pieces under different circumstances and it would further be found obvious through routine experimentation, depending on the desired work piece, to rotate the brushes at a speed within 5-30m/s. The applicant fails to provide any evidence of criticality or unexpected results for the claimed speed range (see MPEP 2144.05).

26. In reference to claim 58, the Ingromat reference further discloses that each of the conveyor devices has an independent drive.

27. In reference to claim 59, the Ingromat reference further discloses that each of the conveyor devices may be a V-belt as shown on page 33.

28. In reference to claim 60, the Ingromat reference discloses that each of the conveyor devices may be a V-belt, as discussed supra relative to claim 59, and the Ingromat reference further discloses that the conveyor devices may have different widths. Therefore, it would further be obvious when the conveyor device has larger

widths to make the conveyor device in the form of a double or triple V-belt to accommodate the extra width and brushes required without increasing the thickness of the belt. It would further be obvious that in the case of a triple V-belt, at the middle V-belt would accommodate at least some of the brushes.

29. In reference to claim 61, it would further be obvious to form the V-belt, as disclosed by the Ingromat reference, out of rubber because it is old and well known in the art to form V-belts out of rubber material.

30. In reference to claim 63, as discussed supra, it would have been obvious to form the V-belt out of rubber and to attach the brushes or the bristles to the V-belt by a bond.

31. In reference to claim 64, it would further be obvious that at least the top portion of the V-belt may be considered to be the carrier because the top portion carries the brushes and that the middle portion of the V-belt may also be considered to be an elevation on the top of the V-belt for guiding and supporting the carrier.

32. In reference to claim 71, the Ingromat reference further discloses a resistance element (first shown on the bottom of page 17 and more clearly shown as numbers 36 and 37 on page 31) that is located downstream from a diversion point of the conveyor device, as seen in the direction of rotation, before one of the brush or bristles resumes contact with the workpiece.

33. In reference to claim 72, the Ingromat reference further discloses that the resistance element is located in a region in which the brush or bristles leave the circular path produced by the diversion point of the conveyor device and returns to a linear or rectilinear movement.

34. In reference to claim 73, the Ingromat reference further discloses that the resistance element mechanically prevents the bristles from yielding in the direction of rotation.

35. In reference to claim 74, the Ingromat reference further discloses that the resistance element is introduced into a path of the brush or bristles such that tips of the bristles butt against the resistance element.

36. In reference to claim 78, the Ingromat reference or alternatively the Ingromat reference in view of Herrington, as discussed supra discloses an apparatus comprising at least first and second conveyor devices each having at least one brush guided at least approximately linearly past a region of the workpiece to be treated transversely with respect to an advance direction of the workpiece, the first and second conveyor devices rotate in opposite directions to one another and are positioned for respectively treating the first and second main surface of the workpiece and the first and second conveyor devices are both either inherently capable of or would obviously be modified to rotate so as to treat the edge surface of the workpiece, as discussed supra.

37. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Ingromat reference or alternatively the Ingromat reference in view of Herrington, as discussed supra, and further in view of McCormick et al. (2,958,882).

38. The Ingromat reference discloses the apparatus wherein it the brushes disclosed may be capable of removing an oxide layer or alternatively it would have been obvious

to replace the brush bristles of the Ingromat reference with the brush bristles disclosed by Herrington to allow the Ingromat apparatus to remove oxide layers from workpieces, as discussed supra. However, the Ingromat reference fails to disclose a base plate or that the apparatus is arranged in a standing position such that the first and second conveyor devices are guide the respective brushes past the workpiece wither ion the direction of the base plate or from a top of the apparatus downward. It clearly would have been obvious that the Ingromat apparatus may be oriented vertically if desired to treat a workpiece that is in an upright position. In this case, the conveyor devices and advance direction of the workpiece will all be relatively situated in the same orientation as the apparatus disclosed by McCormick. McCormick further discloses a base plate in the form of a tabletop that is necessary to support the workpieces during treatment by the conveyor devices. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that in order to use the Ingromat apparatus to treat a workpiece in a vertical orientation, the Ingromat apparatus would require a base plate to support the workpiece wherein at least one of the conveyor devices on either side of the workpiece, which may be considered to be respective first and second conveyor devices, will be rotating so as to guide the brushes toward the base plate or from a top of the apparatus downward.

39. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Ingromat reference or alternatively the Ingromat reference in view of Herrington, as discussed supra, and further in view of Derby (559,166).

40. The Ingromat reference discloses the apparatus wherein it the brushes disclosed may be capable of removing an oxide layer or alternatively it would have been obvious to replace the brush bristles of the Ingromat reference with the brush bristles disclosed by Herrington to allow the Ingromat apparatus to remove oxide layers from workpieces, as discussed supra. However, the Ingromat reference fails to disclose a delimiting plate in the apparatus. In the orientation of the Ingromat apparatus as disclosed, the workpiece is fed relative to the conveyor devices in a similar manner as the workpieces as disclosed by Derby wherein Derby further discloses clamping blocks (d^6), which may also be considered to be delimiting plates, located on either side of the workpiece to prevent the workpiece from being pushed out of position by the motion of the conveyor devices having treating parts thereon. Therefore, it further would have been obvious to provide the Ingromat apparatus with similar clamping blocks or delimiting plates to maintain the workpiece in a desired position during treatment, as taught by Derby. In this case, any two of the conveyor devices that guide their respective brushes in the same direction may be considered to be the first and second conveyor devices, which will both guide the brushes along the workpiece in the direction of a delimiting plate which guides the workpiece at one side.

41. Claims 52, 55, 56 and 75 are rejected under 35 U.S.C. 103(a) as obvious over Ingromat in view of Herrington (2,767,413).

42. In reference to claim 52, when using the bristles disclosed by Herrington in place of the bristles of the Ingromat reference, as discussed supra, it would further be obvious

that the bristles must be at least somewhat abrasive to remove an oxide layer from metal.

43. In reference to claim 55, the base of the bristles disclosed by the Ingromat reference and by Herrington are both surrounded by some portion of the support wherein the surrounding portion may be considered to be a stabilizing and supporting sheath.

44. In reference to claim 56, page 33 of the Ingromat reference shows the brush bristles to be formed as part of a belt of the conveyor device, thus it would have been obvious to one of ordinary skill in the art that the bristles may be coupled to the respective conveyor device by a bond to form a strong connection between the brushes and the conveyor devices.

45. In reference to claim 75, as discussed supra, it would have been obvious that each of the conveyor devices is a V-belt having bristles coupled onto a top side thereof by a bond either directly or via a carrier and at least some of the bristles are inclined by up to 45° in the direction of rotation of the V-belt.

46. Claims 53, 76, 79-81, 83 and 84 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Ingromat reference or alternatively the Ingromat reference in view of Herrington, as applied to claims 39, 46 and 78, and further in view of Lisec (5,237,716).

47. In reference to claims 53, 79, 80, 81, 83, 84 and 85, the Ingromat reference, having the structure discussed supra, is inherently capable of fully machining at least

the side edge surface of a workpiece, specifically in a situation that the workpiece is relatively thin and the brushes may be spaced such that each brush overlaps the entire sides of the workpiece, as discussed *supra*. Further, the Ingromat reference shows that some of the bristles on the brushes may be angled in the direction of rotation of the respective conveyor devices, but Ingromat fails to disclose that the brushes are angled at up to 45° such that the tip of each bristle is in front of, in the direction of rotation, the opposite end of the respective adjacent bristle in the direction of rotation. Lisec discloses a similar treating apparatus for treating (by cleaning, similar to Ingromat) a workpiece, wherein the workpiece passes along the apparatus and is contacted and treated by a plurality of rotating brush mechanisms and Lisec further teaches that the bristles on the brushes are angled in a direction perpendicular to the direction of movement of the workpiece and that adjacent brush mechanisms have the bristles angled in opposite directions to one another, which will ensure that the bristles will reliably contact and treat not only the surfaces (33) directly facing the brushes but also the entire side (35) and interior edge (34) surfaces of the workpiece (Col. 2, lines 3-33). Therefore, it further would have been obvious to one of ordinary skill in the art at the time the invention was made to angle the bristles of each conveyor device of the Ingromat apparatus in a direction that is perpendicular to the direction of movement of the workpiece and to alternate the direction of inclination between adjacent brushes to ensure that outer edges and interior edges facing opposite directions are all contacted and treated by the angled bristles, as taught by Lisec. Further, although Lisec does not disclose a specific angle, the Lisec reference does clearly show that the bristles are

angled such that the tip of each bristle is in front of, in the direction that the bristles are angled, the opposite end of the respective adjacent bristle in the direction that the bristles are angled. Therefore, it would further have been obvious, when the bristles are angled, as taught by Lisec, that the brushes would be angled in the direction of rotation for each conveyor device to increase the contacting effect on each side outer and inner edge surface such that the tip of each bristle is in front of, in the direction of rotation, the opposite end of the respective adjacent bristle in the direction of rotation. Finally, Lisec fails to provide a specific angle at which the bristles are inclined, but does clearly disclose that the angle is a result effective variable that will affect the result of the cleaning apparatus based on different workpieces and brushes. Therefore, because the applicant fails to provide any evidence of criticality or unexpected results for the claimed angles, it further would have been obvious through routine experimentation that the bristles may be angled at up to 45° or may specifically be angled at about 15° relative to the direction of rotation (see MPEP 2144.05).

48. In reference to claim 76, the Ingromat, Herrington and Lisec references make obvious an apparatus for machining (removing oxide or scale) a workpiece with an edge surface, wherein each of the first, second, third and fourth conveyor devices, having angled bristles, as taught by Lisec, will ensure contact and complete machining of the edge surface of the workpiece and wherein the first and second and the third and fourth conveyor devices are respectively offset to one another along a direction of travel of the workpiece on the opposite first and second sides of the workpiece, as discussed supra, wherein a method for machining a metallic workpiece to remove an oxide layer from an

edge surface thereof will inherently comprise the steps of providing and operating the first, second, third and fourth conveyor devices such that at least one brush runs at least approximately linearly across a desired surface of the workpiece, guiding the workpiece past the first, second third and fourth conveyor devices transversely with respect to a direction of rotation of the conveyor devices, the first and third conveyor devices rotating in opposite directions and machining the first surface and the edge surface of the workpiece and the second and fourth conveyors rotating in opposite directions and machining the second surface and edge surface of the workpiece, aligning the first and second conveyor devices in an offset manner along a travel direction of the workpiece on the opposite first and second sides of the workpiece and aligning the third and fourth conveyor devices in an offset manner also along the travel direction of the workpiece on the opposite first and second sides of the workpiece and ensuring contact and complete machining of the edge surface between the first, second, third and fourth conveyor devices and each of their respective brushes along the entire respective edge surface of the workpiece.

49. Claim 82 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Ingromat reference in view of Lisec (5,237,716) or alternatively the Ingromat reference in view of Herrington and Lisec (5,237,716), as applied to claims 80 and 81, and further in view of Hutchinson et al. (5,634,397).

50. The combination of the Ingromat reference with Hutchinson and/or Lisec provides the apparatus as discussed supra, but fails to disclose that the carrier

segments of the conveyor devices each include a groove and a tongue on opposite ends to be connected to tongues or grooves, respectively, of adjacent carrier segments. Hutchinson discloses a similar cleaning machine including at least one conveyor device carrying brushes for cleaning a workpiece and teaches that the conveyor device(s) is comprised of a plurality of carrier segments (54), each having a groove (61) and a tongue (62) to engage adjacent tongues and grooves, respectively, which will allow the conveyor to be driven by a toothed sprockets (45/46), which will ensure reliable driving of the conveyor and the separate carrier segments will allow a user to quickly and easily remove and replace a damaged segment or a segment having damaged or missing brushes thereon. Therefore, it further would have been obvious to provide the conveyor devices of the Ingromat reference to have similar structure as the conveyor devices taught by Hutchinson, formed of a plurality of carrier segments, each having a tongue and groove on opposite sides, to ensure reliable driving of the a conveyors and allow for quick and easy replacement of damaged segments.

Allowable Subject Matter

51. Claims 62 and 65-70 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim (being amended to overcome rejections under 35 U.S.C. 112, 1st paragraph) and any intervening claims.

Response to Arguments

52. Applicant's arguments filed 10/6/2008 have been fully considered but they are not persuasive.

53. The applicant has repeated several arguments mad in previous responses. Please see the preceding Office Action for the response to repeated arguments. The applicant has also argued that the prior art of record is not capable of machining or treating the entire edge surface of the workpiece. However, as clearly discussed supra, the Ingromat reference is clearly capable of contacting and treating the entire edge surface of a workpiece, depending on the size and shape of the workpiece, which is not actually claimed in any way. Thus, it is clear that the Ingromat reference may be configured to treat the entire edge surface of at least some workpieces. Additionally, the applicant argues that the previously cited references fail to teach the bristles being angled in a manner, as claimed. In response the Examiner has added the Lisec reference, which teaches that it is desirable to angle bristles on similar treating apparatuses for the specific purpose of treating the entirety of exterior and interior edge surfaces of workpieces. Therefore, the apparatus and method claimed buy the applicant are found to be obvious in view of the prior art.

Conclusion

54. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Peterson (2,989,764), Fenton (2,158,694), Shimogori et al (4,406,761), Thym et al (3,983,889), Bogese (3,720,973), Seufert (582,509), Armstrong (3,885,356), Paddock (2,312,186), Weber et al (2005/0005374), Rajala et al

(2003/0140942) and Johnson et al (5,679,067) all disclose apparatuses having at least some similar structure to the applicant's claimed invention.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **BRYAN R. MULLER** whose telephone number is (571)272-4489. The examiner can normally be reached on Monday thru Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica S. Carter can be reached on (571) 272-4475. The fax phone

Art Unit: 3727

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bryan R Muller/
Primary Examiner, Art Unit 3727
4/30/2009